



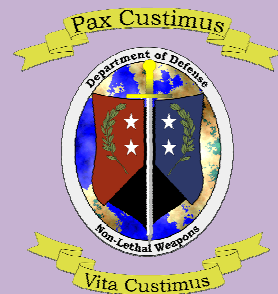
JNLWP

**First Quarter
Fiscal Year 2009**

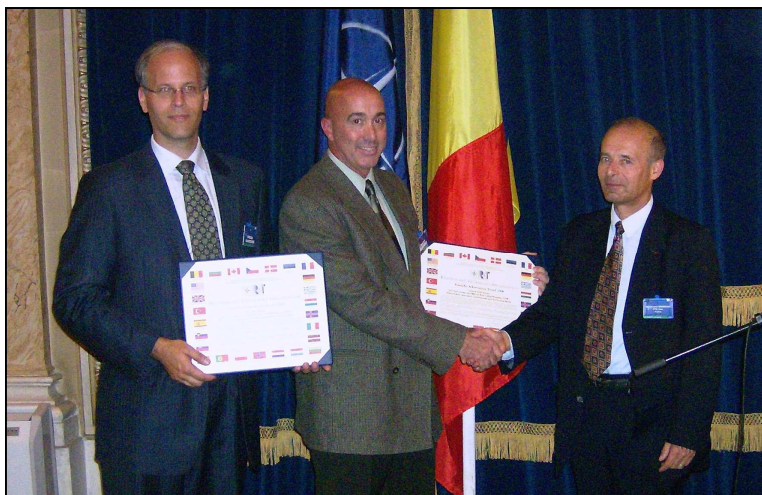


Joint Non-Lethal Weapons Program Newsletter

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Non-Lethal Weapons Study Receives NATO Award



Col. Kirk Hymes (center) and John Nelson (left) accept the 2008 Scientific Achievement Award from Jacques Bongrand (right), chairman of NATO's Research and Technology Board, at an awards ceremony in Bucharest, Romania.

The North Atlantic Treaty Organization's (NATO's) Research and Technology Organization (RTO) selected the System Analysis and Studies-060 (SAS-060) study on non-lethal weapons effectiveness as a recipient of the RTO 2008 Scientific Achievement Award. Colonel Kirk Hymes, Director of the Joint Non-Lethal Weapons Directorate (JNLWD), chaired the study.

In 1999, NATO identified NLWs as a critical additional capability necessary to meet the demands of future operations in terms of both accomplishing military tasks and satisfying policy and operational constraints. Moreover, NATO felt that NLWs could provide NATO commanders and their forces additional tools, offer new dimensions of precision and create asymmetric advantages. However, NATO understood that before commanders would be comfortable employing NLWs, they needed to understand their effectiveness. NATO and its member nations also needed to

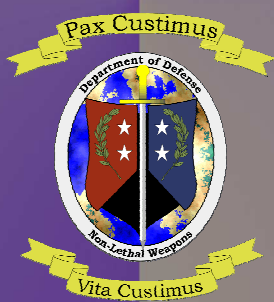
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Calendar of Events

- 28-29 January: Navy NLW Integrated Concept Team Meeting
- 04-17 February: COBRA GOLD
- 09-13 February: JNLWP Program Reviews
- 19 February: Human Effects Review Board Meeting
- 11 March: Central Action Officer Meeting



Non-Lethal Weapons Study Receives NATO Award *(continued from page 1)*

determine which NLW capabilities to develop and field and how best to employ them. Thus the NATO NLW Roadmap called for two studies to address these issues—an initial study (SAS-035) to develop a methodology for assessing NLW effectiveness and a follow-on study (SAS-060) to test, verify and extend that methodology.

The U.S. served as the lead nation for the SAS-060 study, with Col. Hymes as the chairman of the task group that conducted the study. John Nelson, Senior International Defense Analyst for the JNLWD, served as the task group's vice chairman. The SAS-060 Task Group also included 11 other NATO member nations: Belgium, Canada, Denmark, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden and the United Kingdom.

The SAS-060 Task Group conducted the study from August 2004 to December 2007. As a result of SAS-060, a developed, tested and agreed-upon methodology for assessing NLW effectiveness is now available for NATO member nations to use when making important decisions about NLWs. This methodology will be valuable in promoting interoperability and providing a common framework for addressing NLW issues.

NATO selected the SAS-060 study for the award during the executive session of the NATO Research and Technology Board (RTB) meeting on April 2, 2008. The award presentation took place at a formal awards ceremony and dinner on September 24 in Bucharest, Romania, in conjunction with NATO's fall 2008 RTB meeting. According to the award notification letter, "The award recognizes exceptional effort in significant RTO activities, excellence and originality in the scientific and technical content therein, as well as outstanding results in terms of military benefit." Col. Hymes and Mr. Nelson accepted the award on behalf of the SAS-060 Task Group.

The completion of SAS-060 has led to a follow-on three-year study, SAS-078, which will carry out a capabilities-based assessment to understand alliance and national NLW requirements, assess current and projected capabilities versus requirements, identify capability gaps and potential solutions and offer study conclusions and recommendations. The SAS-078 kick-off meeting took place October 23-24 in Copenhagen, Denmark. The U.S. is serving as the lead nation for the SAS-078 study, with Col. Hymes as the task group's chairman and additional JNLWD personnel participating.

Non-Lethal Weapons Roadmap Approved

Department of Defense (DoD) leadership approved the DoD Non-Lethal Weapon (NLW) Capabilities Roadmap Version 0 on August 8. Version 0 establishes a baseline of DoD NLW efforts. The document will assist the Joint Non-Lethal Weapons Program (JNLWP) in its planning processes and will support DoD leadership in making informed decisions regarding resources, priorities and policies for NLW capabilities. The roadmap identifies the vision for the DoD Non-Lethal Weapons Program and serves as a path forward to meet the program's goals and objectives.

The Joint Non-Lethal Weapons Directorate (JNLWD) and the Office of the Secretary of Defense (OSD) for Acquisition, Technology and Logistics (AT&L) drafted Version 0 in collaboration with Joint Staff, Service, OSD and Combatant Command representatives. The document was signed by General James E. Cartwright, USMC, Vice Chairman of the Joint Chiefs of Staff; the Honorable John J. Young, Jr., Under Secretary of Defense for AT&L;

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Non-Lethal Weapons Roadmap Approved *(continued from page 2)*

and General James T. Conway, Commandant of the U.S. Marine Corps and Executive Agent for DoD NLWs.

As the foundation for DoD NLW planning efforts, Version 0 includes a summary of fielded equipment, budget information, developmental capabilities and technologies in the NLW portfolio. Version 0 summarizes warfighters' capability requirements and incorporates guidance from high-level DoD documents, including the Quadrennial Defense Review, the Strategy for Homeland Defense and Civil Support and the 2008 Strategic Planning Guidance. The document describes non-material influences that affect the ability of NLWs to meet warfighter needs, dividing these influences into eight categories: Policy, Legal and Treaty Compliance, Interagency Coordination, Human Effects, Test and Evaluation, Training and Education, International Engagement, and Public and Legislative Affairs. The document then draws conclusions from all these factors and makes recommendations for furthering the DoD NLW program.

Development of Version 1 of the roadmap has already begun, with a targeted completion date of August 2009. Version 1 will incorporate the results of the recently completed Joint Non-Lethal Effects Capabilities-Based Assessment and will include Service-unique NLW efforts.

Joint Coordination and Integration Group Meets for Service Updates

The Joint Non-Lethal Weapons Directorate (JNLWD) hosted the Joint Coordination and Integration Group (JCIG) meeting on October 8 in Dumfries, Virginia. The biannual JCIG meeting gathers Colonel- and Captain-level members from each of the Services, the U.S. Coast Guard (USCG) and U.S. Special Operations Command (SOCOM), as well as



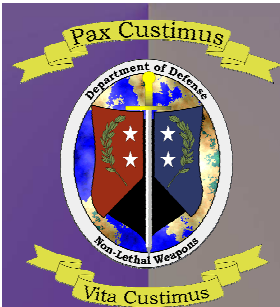
Col. Kirk Hymes, JCIG chairman, welcomes meeting attendees during his opening remarks.

many others interested in Service updates on non-lethal weapons (NLWs). Other attendees included representatives from the Combatant Commands; the Office of the Secretary of Defense (OSD) for Acquisition, Technology and Logistics; OSD for Policy; and the Department of Homeland Security (DHS). Colonel Kirk Hymes, Director of the JNLWD, chaired the meeting, which drew more than 70 participants to hear the latest NLW news from the Joint Non-Lethal Weapons Program and to review Service-specific NLW programs.

The fall JCIG meeting had three main focus areas: an update on the Active Denial System, the path forward for the Long-Range Human Electro-Muscular Incapacitation program and the path forward for the Optical Warning, Distraction and Suppression program. Other discussion topics included the Vehicle Lightweight Arresting Device and its Remote Deployment Device, Mk19 Non-Lethal Munitions, the Navy's maritime test bed, the JNLWD's program development process and budget considerations.

Following the meeting, attendees gathered at King Street Blues in Stafford, Virginia, for an evening social, where they put business aside and enjoyed some camaraderie.

The next JCIG meeting is scheduled for April 2, 2009.



Penn State's Non-Lethal Weapons Certificate Program Receives Honors

A non-lethal weapons (NLW) training certificate program, created for and sponsored by the Joint Non-Lethal Weapons Program (JNLWP), recently received the 2008 Award for Excellence for Non-Credit Program Development. The University Continuing Education Association (UCEA) Mid-Atlantic Region selected the course, entitled "Non-Lethal Weapons: Policies, Practices and Technologies Certificate Program," for the award.

The Center for Community and Public Service (CCPS) at the Pennsylvania State University Fayette's Eberly Campus developed and administers the course for the U.S. Department of Defense under a contract from the U.S. Marine Corps and the Joint Non-Lethal Weapons Directorate. CCPS provides NLW training and education program support to the Institute for Non-Lethal Defense Technologies (INLDT). Under the supervision of Penn State's Applied Research Laboratory (ARL), the INLDT oversees all the university's NLW-related educational efforts and also conducts NLW research for the JNLWP.

The certificate program is a web- or DVD-based, university-level, non-credit, independent-study course. The NLW course consists of 62 hours of instruction that include interactive simulations and exams to test the student's knowledge and understanding of the material. The interactive learning experience gives participants the opportunity to apply decision-making skills to real-world situations and complements the hands-on instruction they receive during their military training.

Although NLW dynamics and technologies are constantly changing, the course material stays up to date. Ted A. Mellors, CCPS director, and his team of subject matter experts frequently visit military bases and talk to industry experts to obtain the newest information, which they use to keep the course material current.

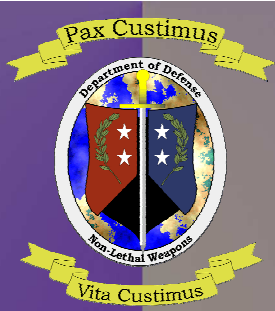


Carolyn Callaghan, of the UCEA Mid-Atlantic Region Awards Committee, presents the 2008 Award for Excellence for Non-Credit Program Development to Joe Segilia, Penn State Fayette's Director of Continuing Education and Outreach.

Since CCPS began offering the certificate program in April 2005, more than 2,300 military personnel on four continents and in 47 states have enrolled. While the course is open to anyone, any active-duty or active reserve member of any U.S. military Service, as well as government-employed civilians, can enroll free of charge.

The UCEA Mid-Atlantic Region Awards Committee selected the Non-Lethal Weapons: Policies, Practices and Technologies Certificate Program for the award out of submissions from colleges and universities across the U.S. Mid-Atlantic region. The award recognizes the dedication, talent and proficiency of CCPS, the INLDT and Penn State's ARL in serving a particular population (in this case, the U.S. military) by providing university-based continuing professional education.

Carolyn Callaghan and Mike Zigner, co-chairs of the 2008 UCEA Mid-Atlantic Region Awards Committee, presented the award on October 1 at a formal awards ceremony and dinner during the UCEA Mid-Atlantic Region Annual Conference in Wilmington, Delaware. Joe Segilia, Penn State Fayette's Director of Continuing Education and Outreach, accepted the award on behalf of the CCPS and INLDT staffs.



Education

Reshaping Non-Lethal Weapons Education

The Capabilities and Requirements Division at the Joint Non-Lethal Weapons Directorate (JNLWD) is working on a number of initiatives to expand and reshape the non-lethal weapons (NLW) education tools available to military service members.

- At the Education Integrated Process Team (IPT) meeting last April, discussions led to the recommendation to combine the Non-Lethal Leaders Symposium (NLLS) and the Education Contact Team (ECT) events. The idea behind the NLLS, hosted by the JNLWD and the Inter-service Non-lethal Individual Weapons Instructor Course at Fort Leonard Wood, Missouri, is to expose senior personnel to NLW topics. However, the IPT determined that the symposium has the potential to better reach a more specific target audience of key Service decision-makers. As a result, the NLLS and ECT discussions centered on the concept of a Service-focused combined event.

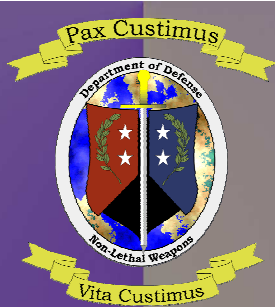
This represents a significant change in strategy—instead of Service participants traveling to attend an event, subject matter experts would travel to a designated Service location to conduct the symposium, giving more key Service leaders the chance to participate. Subject matter experts could then tailor the presentations to the specific audience at each location, making the event more relevant to each Service. The JNLWD is now working with the Services to implement the combined symposium. Initial efforts are focusing on holding one ECT/NLLS per Service per year, with each Service's Training and Education Resource Officer coordinating the event.

- The Center for Community and Public Safety at the Pennsylvania State University Fayette's Eberly Campus is creating a series of escalation-of-force simulations. These video- and animation-based multi-media simulations will help military service members learn how to apply correct escalation-of-force decision-making skills to operational scenarios. Penn State and the JNLWD have already completed simulations for convoy operations and cordon-and-search operations, with distribution to military schools expected in December. The third simulation, currently in production in cooperation with the U.S. Army Military Police School, will focus on detainee operations. Upon completion, the videos will be available to all the Services to use in their training and education courses.



This image shows a scene from Penn State's convoy operations escalation-of-force simulation. These multi-media simulations will help military service members improve their decision-making skills for real-life escalation-of-force situations.

All the Service representatives at April's IPT meeting agreed to work on expanding NLW education efforts across all levels of the Department of Defense. Each Service has ongoing courses that could include lessons on NLWs. Meeting attendees agreed that the Services need to review their ongoing Professional Military Education courses to identify which of the education and training venues would most benefit from the inclusion of NLW information. By expanding the availability of NLW education, the education program can help military service members at all levels learn more about the multitude of escalation-of-force options available to them.



Acquisition

Improved Flash-Bang Grenade Reaches Milestone B

On September 19, the Improved Flash-Bang Grenade (IFBG) reached a Milestone B decision, moving the program into the System Development and Demonstration phase of the acquisition process. The IFBG is the third evolution of the flash-bang grenade, intended to replace currently fielded devices that have identified safety hazards and performance limitations, as well as to provide a longer-duration incapacitation. The Joint Non-Lethal Weapons Program is the sponsor of the IFBG project.

The IFBG works by ejecting a metal powder payload that reacts with oxygen in the air to create a loud bang and a large, bright, long-duration flash.

The goal of the device is to temporarily incapacitate targeted individuals while incorporating improved safety to the user and non-combatants in the target area, as well as reduced environmental impacts. The IFBG can support missions such as hostage rescue, room clearing and other operations in complex urban terrain.



The IFBG temporarily incapacitates the target(s) with a loud bang and a large, bright, long-duration flash.

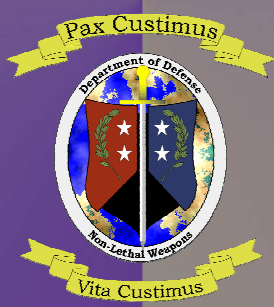
As the lead for the IFBG program, U.S. Special Operations Command (SOCOM) held an Early User Test (EUT) at Fort Bragg, North Carolina, on September 24. The EUT tested the IFBG in a variety of room-clearing scenarios to determine whether it is operationally effective in realistic environments. The testing also ensured that the IFBG meets government performance specifications.

The EUT evaluated the IFBG on four main criteria: flash/sparks, smoke, sound and ease of operation. The tests used both the IFBG and its predecessor, the currently fielded NICO BTV-1 flash-bang grenade. Testing both grenades yielded data on how the IFBG compares to the BTV-1 on the assessment criteria. Initial test observations indicate that the IFBG's smoke did not interfere with target identification and engagement and that the IFBG has a similar flash effect but a greater bang effect than the BTV-1.



The IFBG can support room-clearing scenarios and other operations in complex urban terrain.

After SOCOM completes the report on the results of the EUT, the program will incorporate any necessary modifications to the IFBG and then issue a request for proposals to commercial contractors. The program estimates that the IFBG will reach the production phase of the acquisition process, a Milestone C decision, in the fourth quarter of fiscal year 2011.



Advanced Non-Lethal Projectile Shows Improvements

Under sponsorship of the Joint Non-Lethal Weapons Program, engineers at the Naval Surface Warfare Center Dahlgren Division in Dahlgren, Virginia, performed a series of live-fire tests on the Advanced Non-Lethal Projectile (ANLP) September 23-29. The ANLP is a developmental blunt-impact munition that could replace the currently fielded M1012 non-lethal point munition. ANLPs look and operate much like currently fielded projectiles; however, the improvements make ANLPs effective at greater distances, helping them better meet warfighter needs.

The ANLP is made of a visco-elastic material similar to rubber, but softer, heavier and denser than the Army's M1012, the currently fielded rubber bullet for point targets. To compensate for the softer material, the ANLP incorporates thicker fins. Upon impact, the fin-stabilized ANLP deforms and spreads over a larger surface area than the M1012, decreasing the risk of skin penetration without decreasing the effectiveness of the munition. This latest round of tests demonstrated the improved effectiveness of the advanced material and geometry of the ANLP over its predecessor. The new munitions were tested at both indoor and outdoor facilities at ranges from 10 to 40 meters.

This series of tests evaluated the ANLP's muzzle velocity, impact velocity at various ranges, atmospheric drag coefficient, force and pressure on the target and the munition's accuracy and precision. Early data analysis suggests that the new munitions will be effective at longer ranges than those currently in use without making them more dangerous at closer ranges or increasing the risk of significant injury to the target.

Data from these tests, along with other information on the ANLP's material and geometric design, will transition to the U.S. Army's Project Manager for Soldier Weapons and its Project Manager for Close Combat Systems at Picatinny Arsenal, New Jersey, where research and testing will continue to support a product improvement over the M1012. Additional improvements, such as the incorporation of an optimal propellant powder, will likely be made prior to fielding.

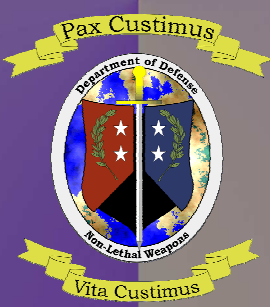


The ANLP (top) and the M1012 (bottom) after impact testing. Although the two munitions look similar, the ANLP's improvements make it effective at greater distances.

Market Research Demonstrations Feature Mission Payload Module – Non-Lethal Weapons System Technologies

U.S. Marine Corps Systems Command (MARCORSYSCOM) held market research demonstrations for the developmental Mission Payload Module – Non-Lethal Weapons System (MPM-NLWS) at the Naval Surface Warfare Center Dahlgren Division in Dahlgren, Virginia, in early October. As part of the technology development research related to the MPM-NLWS, program personnel assessed the modified commercial-off-the-shelf non-lethal tube-launched munitions systems. They also evaluated whether those systems could meet the non-lethal weapon counter-personnel capability requirements for range and accuracy.

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Market Research Demonstrations Feature Mission Payload Module – Non-Lethal Weapons System Technologies *(continued from page 7)*

The MPM-NLWS will potentially support missions requiring crowd dispersal, area denial, access control point security, unit defense and convoy security and will allow warfighters to engage threats at greater standoff distances. The multiple-tube design allows the firing of several payloads. Potential non-lethal payloads include, but may not be limited to, incapacitating flash-bang, thermobaric, blunt-impact, obscurant and training munition types.

Two commercial contractors—MetalStorm, Inc., and Combined Systems, Inc.—demonstrated their systems to program personnel from MARCORSYSCOM, the Joint Non-Lethal Weapons Directorate, the U.S. Army and the U.S. Navy. As the lead-Service Program Manager for the MPM-NLWS, MARCORSYSCOM selected the systems to participate in the demonstration based on program requirements and proposals from the contractors. The Joint Non-Lethal Weapons Program is the resource sponsor for the MPM-NLWS program.

The demonstrations provided data about the MPM-NLWS that will assist program managers in writing proper performance specifications, a step necessary to reach Milestone B, the System Development and Demonstration phase of the acquisition process. MARCORSYSCOM anticipates reaching Milestone B in fiscal year 2009.

HERB Meets to Review Human Effects Research

The Human Effects Review Board (HERB) met on September 23 in Dumfries, Virginia, for its third and final meeting of fiscal year 2008. The HERB meets on an as-needed basis to review non-lethal weapon (NLW) programs funded by the Joint Non-Lethal Weapons Program. The meetings provide a venue for independent assessment of the human effects of NLWs as they progress through the acquisition process. HERB meetings generate detailed reports that assess the completeness of human effects research and make recommendations at each stage of the acquisition process. This ensures NLWs meet their mission objectives while still having reversible effects. The HERB also reviews Service-unique programs upon request.

HERB members include the Joint Non-Lethal Weapons Directorate (JNLWD) Health Effects Officer, Lieutenant Colonel Anne Barrett, who serves as the chairperson, and representatives from each of the Services' Surgeon General's offices and Safety Divisions. Others involved with NLW human effects research also attend HERB meetings as non-members, including representatives from the JNLWD's Acquisition and Technology Divisions, human effects subject matter experts and invited guests from other related areas, including environmental, legal, treaty and policy experts.

At the recent meeting, the HERB reviewed, assessed and provided recommendations for two Service-unique programs: the XM104 Non-Lethal Bursting Hand Grenade and the M98/99 Vehicle-Launched Non-Lethal Grenade. Both NLWs have applications in crowd-dispersal situations and carry an overall low risk of significant injury. As a result of this meeting, the HERB reports for these two programs will assist the program managers in completing final human effects evaluations. These evaluations will then help the programs move to the next step in the acquisition process. During the meeting, the group also reviewed and provided final comment on the HERB standard operating procedures and the draft Department of Defense Instruction for NLW Target Human Effects Characterization.

The next HERB meeting is scheduled for February 19. The agenda for this meeting includes review and discussion of three programs: the Mission Payload Module – Non-Lethal Weapons System, the Improved Acoustic Hailing Device and the Vehicle Lightweight Arresting Device.



Hail & Farewell

Farewell to:

BG Peter Palmer, USA
Joint Integrated Product Team
U.S. Army Voting Principal

BGen David Papak, USMC
Joint Integrated Product Team
U.S. Marine Corps Voting Principal

LCDR Cabot Aycock, USN
Experimentation Officer
Joint Non-Lethal Weapons Directorate

Laura Falkenbach
NLW Program Manager
U.S. European Command

Hail to:

BG Joseph Martz, USA
Joint Integrated Product Team
U.S. Army Voting Principal

BGen Walter Miller, USMC
Joint Integrated Product Team
U.S. Marine Corps Voting Principal

LtCol Holden Dunham, USMC
NLW Program Manager
U.S. European Command

LtCol Ed Howell, USMC
NLW Program Manager
U.S. Africa Command

Kelley Hughes
Strategic Communication Officer
Joint Non-Lethal Weapons Directorate

LCDR Lance Lantier, USN
Experimentation Officer
Joint Non-Lethal Weapons Directorate

Darrel Webb
Maritime Project Engineer
Joint Non-Lethal Weapons Directorate

Alexander Sosa
U.S. Southern Command Liaison Officer
Joint Non-Lethal Weapons Directorate



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